Module 6:

Health Assessment

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Overview

Introduction

This module contains basic nutrition information you will need at WIC.

The module does NOT cover everything about nutrition. As a Community Nutrition Worker (CNW), you may want to learn more. For more information on nutrition, you may want to take a course or review a college textbook on basic nutrition.

Learning Objectives

After completing this module, the CNW will be able to:

- describe the role of nutrition in health and well being,
- describe the major functions of food for the body,
- describe how the body digests foods,
- list the 6 major nutrient groups and common food sources of each,
- list the 5 WIC targeted nutrients and
  - their roles in the body,
  - good food sources of each, and
  - the WIC foods that provide them,
- describe the 5 food groups and assign foods to them,
- describe and use the *Food Guide Pyramid,* and
- describe factors influencing food habits and choices.

Words that you may not know are **underlined. Definitions for these words can be found in the **Glossary** at the end of the module. (Note: Words are only underlined the first few times they appear in the text.)*

The Role of Nutrition

Definition	Nutrition is the process by which humans take in and use food.
Why Is Nutrition Important?	Healthy eating is needed during all stages of life. Healthy eating is especially important for: • growth and development, • preventing health problems such as iron-deficiency anemia and tooth decay, and • lowering the risk of developing diseases such as heart disease, certain cancers, diabetes, and osteoporosis.
Nutritional Status	Nutritional status is how well a person's diet has met his/her body's nutritional need. Good nutritional status is when the person's diet meets her/his body's needs for energy, maintenance, and growth. Poor nutritional status is when the person's diet does not meet her/his body's needs for energy, maintenance, and/or growth.

Food

Definition

Food is anything that is eaten and helps meet the body's need for energy, growth, maintenance, repair, and/or regulation of body functions.

Sources

Food comes from plants and animals.

Plant sources include:

- grains,
- fruits,
- vegetables,
- seeds, and
- nuts.

Animal sources include:

- meat,
- poultry,
- seafood,
- eggs, and
- milk products (such as yogurt).

Functions

The human body needs food for:

- energy,
- growth,
- maintenance and repair, and
- regulation of body functions.

These reasons are described in more detail in the chart on the next page.

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Food (continued)

Major Functions of Food

Function	Description
Energy	Food gives the body energy to do such activities as: • breathing • digesting food, • standing, • walking, and • any movement in which you use your muscles.
Growth	Food helps our bodies gain weight and grow taller.
Maintenance & Repair	Food is needed to keep the body healthy. Almost all cells in our body eventually die and must be replaced with new cells. Food is needed to rebuild cells such as: • red blood cells, • cells lining our intestines, and • cells in our skin.
Regulation	Food is needed for regulation of body functions such as: • control of body temperature, • balance of fluids, and • blood clotting.

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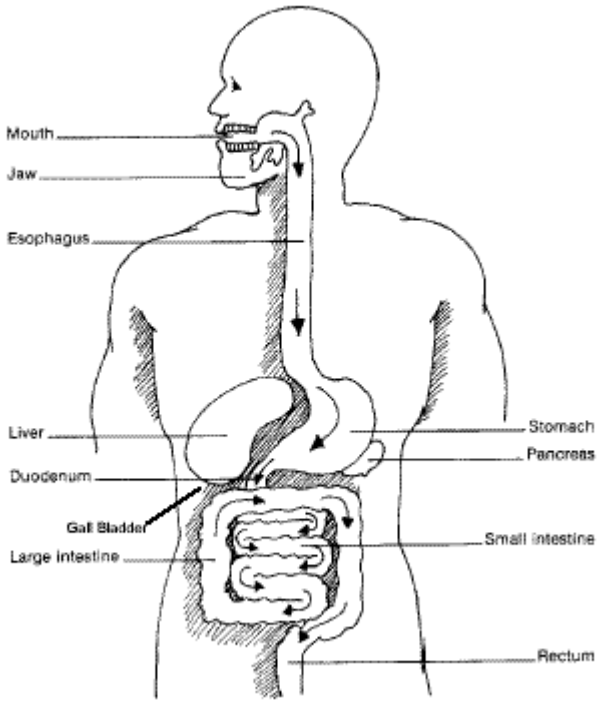
Digestion

Definition	Digestion is the process in which the body breaks down food and absorbs nutrients into the bloodstream and into the cells.
Digestive Process	Digestion takes place in the digestive tract.
Diagram of Digestive Track	The diagram below shows the parts of the digestive tract.



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Digestion (continued)

Chart of Digestion The chart below describes the parts of the digestive system.

Description of Digestion

Part	Description
Mouth	• Digestions starts here. • Teeth break the food into small pieces. • Saliva mixes with the food and breaks down some starches.
Esophagus	• Passageway from the mouth to the stomach. • Food goes through this after being swallowed.
Stomach	• Breaks food down into smaller pieces with acids and with muscle contractions.

Small Intestine	• Digestive enzymes break down foods:
	  • carbohydrates → simple sugars
	  • proteins → amino acids
	  • fats → fatty acids
	• Nutrients are absorbed into bloodstream.

Pancreas	• Makes and releases digestive enzymes and hormones.
Liver	• Makes bile to help the small intestine to digest fat.
Gall Bladder	• Stores bile. • Located under the liver.
Large Intestine	• Water and some minerals are absorbed into the bloodstream from here. • Eliminates undigested “leftover” foods, bacteria and waste materials.

Nutrient Groups

Nutrient	A nutrient is a substance needed by the body for energy, growth, maintenance, repair, and/or regulation.
Major Nutrient Groups	There are 6 major nutrient groups. They are: • proteins, • carbohydrates, • fats, • vitamins, • minerals, and • water.

Protein

Proteins	Protein is a substance needed by the body to build, maintain, and repair cells. Protein is made up of long chains of amino acids.
Where Is Protein Found in the Body?	Almost everything in our bodies contains protein. Blood, skin, bones, muscles, teeth, brain, and hair all are made up of protein.
Functions	Protein is needed to: • build, maintain, and repair cells of the body, • regulate body functions, • fight infection, and • provide energy.
Charts	The charts on the next 2 pages list: • the functions of protein, and • some food sources of protein.

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Protein (continued)

Functions of Protein

Function	Description
Build, Maintain, and Repair Cells of Body	The body builds new cells: • in a pregnant or breastfeeding woman or growing child, • when wounds heal, • when hair and nails grow, and • when new blood is made. Protein is also needed to replace worn-out cells such as: • red blood cells (replaced about every 3 months), and • cells that line the intestine (replaced every week).
Regulate Body Processes	Certain proteins called enzymes help chemical reactions take place in the body.
Fight Infection	Certain proteins called antibodies destroy or weaken harmful germs such as bacteria or viruses.
Provide Energy	If we do not eat enough food, our bodies will use protein for energy. Using protein for energy limits its other functions in the body.

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Protein (continued)

Sources of Protein

Protein	Food Source
Animal Protein	Poultry Seafood Meat Eggs Milk products (such as milk, cheese, and yogurt)
Plant Protein	Legumes • pinto beans • garbanzo beans • kidney beans • split peas • lentils • black-eyed peas • lima beans • soy beans (including tofu) Grains • oats • wheat • rice • corn Nuts • peanuts (including peanut butter) • walnuts • cashews • almonds Seeds • sunflower seeds • sesame seeds

Carbohydrates

Carbohydrates

Carbohydrates are substances that contain sugar, starch, or fiber and give our bodies energy, help with elimination of waste, and add sweetness to foods.

Functions

Carbohydrates are needed by the body for:

- energy,
- fuel for the brain,
- easier waste elimination, and
- adding sweetness to foods.

Sugar

Sugars are also called simple carbohydrates.

Common sugars are:

- lactose (the sugar in milk),
- fructose (the sugar in fruit), and
- sucrose (table sugar).

During digestion, sugars are broken down into glucose. Glucose is absorbed into the blood and is carried to the body cells to be used for energy.

Refined sugar has been purified from plants (such as beets and sugar cane) until only the sugar remains. It is added to foods such as jam, jelly, candy, soda, and desserts. **Avoid or limit refined sugar** since it can cause dental cavities.

Starch

Starches are also called complex carbohydrates because they are long chains of thousands of glucose molecules linked together.

During digestion, starch is first broken down to simple carbohydrates and then to glucose.

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Carbohydrates (continued)

Fiber

Fiber is also called a complex carbohydrate.

Fiber is the part of plant foods that the body cannot digest.

There are several types of fiber. The chart below lists types and sources of fiber.

Type	Source
Bran	Cereals
Pectin/Lignin	Fruits
Cellulose	Vegetable

Dietary fiber helps people:

- have regular bowel movements,
- feel full after eating,
- control blood glucose, and
- lower blood cholesterol levels.

Chart of Food Sources

The chart on the next page lists some food sources of sugars, starches, and fiber.

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Carbohydrates (continued)

Sources for Carbohydrates

Carbohydrate	Food Source
Sugar	Fruit: • Fresh fruit • Dried fruit (such as raisins, apricots, dates, figs, and prunes) Fruit Juice Milk
Starches	Breads (such as rolls and crackers) Cereals (such as oatmeal and ready-to-eat cereals) Pasta (such as macaroni and spaghetti) Grains (such as rice and corn) Vegetables (such as legumes, peas, and potatoes)
Fiber	Legumes (such as pinto and lima beans) Bran Cereals Whole Grain Breads Vegetables (such as green peas, cabbage, carrots, and broccoli) Fruits (such as bananas and prunes)

Fats

Definition	Fats are substances that give our bodies energy, provide essential fatty acids, carry other nutrients, and give a feeling of fullness after eating.
Functions	Fats are needed by the body to: • provide energy, • provide the essential fatty acids, • help our body store other nutrients such as the fat-soluble vitamins A, D, E, and K, and • give satiety (feeling of fullness) and flavor to food.
Types of Fats	There are 2 kinds of fats: • saturated and • unsaturated. Unsaturated fats are usually **liquid** at room temperature and come from plant sources. They can be monounsaturated or polyunsaturated. Saturated fats are usually **solid** at room temperature and come from animal sources. (One plant source of saturated fat is coconut.)
Limit Intake of Saturated Fats	Saturated fats **increase a person's risk for coronary heart disease**. Limit intake of foods that are high in saturated fats.
Chart of Food Sources	The chart on the next page lists some food sources of fats.

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Fats (continued)

Sources of Fat

Fat	Food Source
• **Unsaturated Fats**	
➢ **Monounsaturated**	• Olive, canola, sunflower, and peanut oils. • Salad dressings made from these oils.
➢ **Polyunsaturated**	• Safflower, sunflower, corn, cottonseed, soybean, and sesame oils. • Salad dressings made from these oils. • Special margarines that contain a high percentage of liquid oil. • Fish such as mackerel, salmon, and herring.
• **Saturated Fats**	• Butter and cream. • Whole milk. • Cheese. • Egg yolk. • Meat and meat fat (such as bacon, lard, and chicken fat). • Products made with any of the above items.

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Vitamins

Definition

Vitamins are substances needed by the body in varying amounts to assist in body processes and functions.

Names of Vitamins

Vitamins have been "nicknamed" with the letters of the alphabet, such as Vitamins A, B1, B2, C and D. Vitamins also have chemical names.

When talking to participants about vitamins, use their common names. Common name for vitamins are usually the alphabet names, but for some vitamins, we use their chemical names.

The common names for the vitamins are:

- Vitamin A,
- Vitamin B6
- Vitamin B12
- Vitamin C,
- Vitamin D,
- Vitamin E,
- Vitamin K,
- Thiamin,
- Niacin,
- Riboflavin,
- Pantothenic Acid,
- Biotin, and
- Folate or Folic Acid.

Types of Vitamins

Vitamins are:

- fat-soluble or
- water-soluble.

The chart on the next page shows some of the differences between fat-soluble and water-soluble vitamins.

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Vitamins (continued)

Fat-Soluble vs. Water-Soluble Vitamins

Fat-Soluble (Vitamins A, D, E, K)	Water-Soluble (B-Complex Vitamins, Vitamin C)
• Do not need every day since the body stores these vitamins. • NOT affected by food preparation, storage, or cooking. • NOT easily excreted (may build up in the body if too much is taken in).	• Need every day since the body does not store these vitamins. • Destroyed by heat, air, or water (soaking, boiling, steaming). • Easily excreted through the kidneys in urine.

Chart of Vitamins

The chart on the next pages lists the vitamins, their functions, the problems with deficiencies and excesses, and their food sources.

You do NOT need to know all the information found in the chart. Refer to the chart if you need information about a vitamin.

continued on next page

Vitamins (continued)

Function, Deficiency, Excess & Sources of Vitamins

Fat-Soluble Vitamins (A, D, E, K):

Function	Deficiency & Excess	Food Sources
Vitamin A		
• Develops healthy eyes (makes night vision possible), skin, and mucous membranes. • Helps prevent infections. • Helps develop bones and teeth.	**Deficiency**: • Night blindness and eye changes leading to blindness. • Greater chance for infections. • Dry, scaly skin. **Excess**: • Birth defects. • Miscarriage. • Severe headaches. • Nausea, loss of appetite. • Itchy skin.	• Orange-red vegetables: ➢ carrots ➢ peppers ➢ sweet potatoes • Dark green vegetables: ➢ spinach ➢ greens (collards, kale) ➢ broccoli • Some orange fruits: ➢ mango ➢ papaya ➢ apricot ➢ cantaloupe • Butter • Milk • Cheese • Egg yolk
Vitamin D		
• Helps body absorb calcium. • Improves bone formation. • Helps maintain blood calcium levels.	**Deficiency**: Soft, deformed bones. Rickets in children. **Excess**: *Most Toxic Vitamin! (Toxic signs appear with intake of 5 times the recommended amount.)* • Diarrhea • Nausea • Headache • Calcium deposits in heart, kidneys, and blood vessels.	• Fortified milk • Fish oils • Liver *Direct exposure of skin to sunlight is also a source of Vitamin D.*

Function, Deficiency, Excess & Sources of Vitamins (continued)

Fat-Soluble Vitamins (A, D, E, K) (continued):

Function	Deficiency & Excess	Food Sources
Vitamin E		
• Protects Vitamin A and polyunsaturated fats in the body from harmful processes (oxidation).	**Deficiency**: *Rare except in premature babies.* • Destruction of red blood cells. **Excess**: Rare • Nausea • Diarrhea • Vomiting	• Vegetable oils, shortening, and butter. • Green vegetables • Legumes • Whole-grains • Nuts • Liver
Vitamin K		
• Helps blood to clot.	**Deficiency**: • Slow blood clotting. • Bleeding disorders. **Excess**: *Only the menadione form is toxic* • Jaundice • Lung problems • Anemia	• Green leafy vegetables. *Also produced by bacteria in the intestine.*

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Function, Deficiency, Excess & Sources of Vitamins (continued)

Water-Soluble Vitamins (C & B's):

Function	Deficiency & Excess	Food Sources
Vitamin C		
• Increases iron absorption. • Helps heal wounds. • Develops healthy gums and teeth. • Helps prevent infection. • Strengthens blood vessels.	**Deficiency**: • Scurvy • Weakness • Poor wound healing. • Easily bruised. • Loss of appetite. • Poor growth. • Bleeding gums. • Painful joints. • Depression **Excess**: *little toxicity* • Scurvy if s/he abruptly quits taking the excess amounts.	• Citrus fruits • Citrus juices • Broccoli • Strawberries • Kiwi • Cantaloupe • Guava • Mango • Papaya • Cabbage • Snow peas • Pepper (hot, sweet, and/ or chili)
Thiamin (B1)		
• Helps break down carbohydrates for energy.	**Deficiency**: • Beriberi • Confusion • Loss of appetite • Muscle wasting • Heart failure **Excess**: *None found to date.*	• Meats, especially liver and pork • Wheat germ • Whole grains • Legumes • Peanuts • Fresh green vegetables

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Vitamins (continued)

Function, Deficiency, Excess & Sources of Vitamins (continued)

Water-Soluble Vitamins (C & B's) (continued):

Function	Deficiency & Excess	Food Sources
Riboflavin (B2)		
• Helps break down fat for energy.	**Deficiency**: • Cracks at corners of mouth. • Red swollen tongue. • Teary eyes. • Scaly skin around the nose. • Anemia **Excess**: *None found to date.*	• Milk products • Organ meats • Meats • Fish • Eggs • Legumes • Whole grains, enriched breads and cereals. • Green leafy vegetables. ***Riboflavin is destroyed by sunlight.***
Niacin (B3)		
• Helps break down carbohydrates, fats, and protein. • Helps the body make some hormones and fat.	**Deficiency**: • Pellagra • Tiredness • Weakness • Loss of appetite. • Diarrhea • Skin rash in areas exposed to sun. • Mental illness. **Excess**: • *Flushing* • *Nausea* • *Liver damage*	• Liver • Meat • Fish • Poultry • Peanuts • Whole grains, enriched breads and cereals.

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Function, Deficiency, Excess & Sources of Vitamins (continued)

Water-Soluble Vitamins (C & B's) (continued):

Function	Deficiency & Excess	Food Sources
Vitamin B6		
• Needed to make body proteins. • Needed to break down proteins for energy.	**Deficiency**: • Abnormal brain function • Skin changes **Excess**: • Neurological problems	• Meat • Fish • Poultry • Milk • Eggs • Green vegetables • Avocado • Prunes • Bananas • Whole grains • Potatoes
Folate		
• Helps make new cells, including blood cells.	**Deficiency**: • Neural tube defects, such as spina bifida (due to deficiency before or during pregnancy) **Excess**: • Masks vitamin B12 deficiency	• Green leafy vegetables • Red and organ meats • Oranges and orange juice • Whole grains • Beans • Nuts • Asparagus • Broccoli • Spinach
Vitamin B12		
• Needed to make new cells, including red blood cells. • Helps keep nervous system healthy.	**Deficiency**: • Anemia • Swollen tongue • Poor appetite • Poor coordination • Mental disturbances **Excess**: *None found to date.*	• Meat • Fish • Poultry • Eggs • Milk • Cheese • Yeast

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Function, Deficiency, Excess & Sources of Vitamins (continued)

Water-Soluble Vitamins (C & B's) (continued):

Function	Deficiency & Excess	Food Sources
Biotin		
• Helps break down carbohydrates, proteins, and fat for energy.	**Deficiency**: • Lack of appetite • Depression • Dry skin • Numb feet and hands **Excess**: *None found to date*	• Organ meats • Eggs • Milk • Whole grains
Thiamin (B1)		
• Helps in the break down and production of protein, hormones, cholesterol, and hemoglobin.	**Deficiency**: *Unlikely (unless part of a deficiency of all B vitamins)* • Nausea • Diarrhea • Cramps **Excess**: *None found to date.*	• Produced by intestinal bacteria • Organ meats • Salmon • Eggs • Broccoli • Mushrooms • Pork • Whole grains • Legumes

Minerals

Minerals

Minerals are substances needed by the body in small amounts to form part of the body's structure or regulate chemical reactions in the body.

2 Groups of Minerals

Minerals are divided into 2 groups, those needed in:

- **large** amounts and those needed in
- **small** or **trace** amounts.

The chart below lists the minerals in the 2 groups.

Minerals Needed In:	
Large Amounts	**Small or Trace** Amounts
• calcium • phosphorus • magnesium • sodium • potassium • chloride	• iron • zinc • iodine • selenium • copper • manganese • fluoride • chromium • molybdenum

Chart of Minerals

The chart on the following pages lists the minerals, their functions, the problems with deficiencies and excesses, and their food sources.

You do NOT need to know all the information found the chart. Use the chart to get information about a mineral.

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Minerals (continued)

Function, Deficiency, Excess & Sources of Minerals

Function	Deficiency & Excess	Food Sources
Calcium		
• Forms bones and teeth. • Helps blood to clot. • Helps nerves send messages. • Helps muscles contract.	**Deficiency**: • Poor bone development and bone weakening leading to osteoporosis **Excess**: • Constipation • Kidney stones *Excess cannot be caused by food intake alone.*	• Calcium-fortified foods • Milk products • Corn tortillas (made with calcium) • Canned salmon and canned or dried small fish (calcium in bones) • Tofu (processed using calcium) • Greens (collards, mustard greens, kale) • Broccoli • Legumes
Phosphorus		
• Forms bones and teeth. • Needed to make protein, enzymes and new cells. • Helps maintain acid-base balance in body.	**Deficiency**: *Rare* • Stunted growth • Poor bone development • Weakness • Loss of appetite • Pain in bones **Excess**: • *High intake can increase calcium deficiency*	• Milk and milk products • Meat • Eggs • Poultry • Nuts • Legumes • Whole grains • Soft drinks • Processed foods
Magnesium		
• Forms bones. • Helps muscle function.	**Deficiency**: • Tremors • Convulsions **Excess**: • *Heart changes* • *Coma* *Excess cannot be caused by food intake alone.*	• Green leafy vegetables • Nuts • Whole grains • Meat • Milk • Seafood • Chocolate

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Minerals (continued)

Function, Deficiency, Excess & Sources of Minerals (continued)

Function	Deficiency & Excess	Food Sources
Sodium		
• Helps maintain fluid balance. • Helps maintain acid-based balance. • Helps nerves send messages. • Helps muscles contract.	**Deficiency**: *Rare* • Nausea • Vomiting • Tiredness • Cramps **Excess**: • *High blood pressure (if excess is for a long time)*	• Table salt • Food prepared in brine (such as olives, pickles) • Soy sauce • MSG (monosodium glutamate) • Salty snacks (such as chips, pretzels) • Processed food (such as luncheon meats) • Cheese • Canned vegetables, soup
Potassium		
• Maintains the heartbeat. • Helps muscles to contract. • Stimulates nerves.	**Deficiency**: • Tiredness, weakness in limbs • Rapid heartbeat • Heart failure • Kidney damage **Excess**: *Excess cannot be caused by food intake alone.*	• Orange juice • Bananas • Dried fruits • Potatoes • Meat, fish, poultry • Whole grains • Fruits • Vegetables
Chloride		
• Helps maintain water balance. • Helps maintain acid-based balance. • Part of stomach acid.	**Deficiency**: *Rare* **Excess**: *High blood pressure in sensitive persons*	• Table salt • Foods prepared in brine (such as olives, pickles) • Soy sauce • Salty snacks (such as chips, pretzels) • Cheese • Canned vegetables, soups

continued on next page

Minerals (continued)

Function, Deficiency, Excess & Sources of Minerals (continued)

Function	Deficiency & Excess	Food Sources
Iron		
• Part of hemoglobin in red blood cells. • Part of myoglobin in muscle cells.	**<u>Deficiency</u>**: • Anemia • Weakness, tiredness. • Irritability, headache. • Loss of appetite. • High risk for infections. • Decreased attention span. • Growth retardation (if long-time deficiency). • Confusion **<u>Excess</u>**: • Infections • Liver injury • Acidosis • Bloody stools • Shock *Excess cannot be caused by food intake alone.*	• Meat, poultry, fish • Dried beans/peas • Dried fruit • Green vegetables • Iron-fortified cereals
Zinc		
• Helps produce body proteins. • Helps the body use Vitamin A. • Provides normal taste sensations. • Helps form enzymes and insulin.	**<u>Deficiency</u>**: • Poor wound healing. • Retarded growth. • Retarded sexual development. • Decreased sense of taste. **<u>Excess</u>**: • Nausea • Vomiting • Diarrhea *Excess caused by food intake alone is rare.*	• Meat • Liver • Oysters • Fish • Milk • Whole grains • Nuts • Legumes

continued on next page

Minerals (continued)

Function, Deficiency, Excess & Sources of Minerals (continued)

Function	Deficiency & Excess	Food Sources
Iodine		
• Part of thyroid hormones.	**Deficiency**: • Goiter • Enlarged thyroid gland • Cretinism **Excess**: • Thyroid problems	• Iodized salt • Seafood
Selenium		
• Needed for break down of substances called hydroperoxides.	**Deficiency**: *Rare* • Keshan disease • Muscle weakness **Excess**: • Brittle fingernails and hair • Nausea • Fatigue	• Seafood • Kidney • Liver • Meat
Copper		
• Part of several proteins and enzymes needed by the body.	**Deficiency**: *Rare* • Anemia • Impaired growth **Excess**: *None found to date.*	• Organ meats (especially liver) • Seafood • Nuts • Seeds
Manganese		
• Activates several enzymes needed by the body. • Part of 2 enzymes needed by the body.	**Deficiency**: *Rare* • Reproductive problems. • Impaired growth. • Birth defects. • Deformed bone and cartilage. **Excess**: *None found to date.*	• Whole grains • Fruits • Vegetables

continued on next page

Minerals (continued)

Function, Deficiency, Excess & Sources of Minerals (continued)

Function	Deficiency & Excess	Food Sources
Fluoride		
• Prevents tooth decay. • Helps prevent osteoporosis.	**Deficiency**: • Increased tooth decay in children. • Increased bone loss in older adults. **Excess**: • Discolored teeth if excess occurs in childhood. • Kidney problems.	• Naturally occurring fluoride in water • Fluoridated water *Toothpaste in mouth rinses may also contain fluoride.*
Chromium		
• Maintains normal glucose metabolism.	**Deficiency**: • Impaired glucose metabolism. **Excess**: *No evidence of problems due to food intake alone*	*Eat a varied diet since information on food sources is not yet available*
Molybdenum		
• Acts as cofactor for some enzymes.	**Deficiency**: *Rare* • Neurological damage in people with inborn error of metabolism. **Excess**: *No data on problems due to food intake.*	*Amount varies on soil content in which these are grown:* • Legumes • Whole Grains • Nuts

Water

Water

Water is the body's most important nutrient.

Our bodies are 50-80% water.

Functions

Water is needed by our bodies:

- to regulate body temperature, and
- as the major component of
  - blood,
  - fluid inside the cells, and
  - fluid that lubricates the joints, eyes and mucous membranes.

Loss of Water

Our bodies lose water through:

- urine,
- stools,
- skin, and
- lungs.

Intake of Water

The amount of water a person needs depends on:

- body size,
- temperature and humidity of the environment,
- level of physical activity, and
- health status (pregnant and lactating women, and people with a fever need more water).

Adults lose 2 to 3 quarts of water each day. Drinking 6 to 8 cups of water per day, in addition to the foods we eat, will usually replenish the loss.

Continued on next page

Water (continued)

Sources

Besides taking water in as tap water, people can take in water as:

- beverages (water, milk, tea, coffee, soft drinks) and
- foods (fruits and vegetables).

Dehydration

When the body loses too much water, it becomes dehydrated.

During dehydration, the body overheats more easily and the person may feel weak, dizzy and may have a headache. These symptoms can progress rapidly to delirium and end in death if not treated.

Dehydration occurs more often in:

- **Infants and young children** since they:
  - have a greater portion of their body weight as water,
  - require relatively more water than adults to excrete waste products.
- **The elderly** since their thirst sensation is less reliable.
- **Sick people** if they have frequent vomiting, diarrhea, and/or sweating.

WIC Targeted Nutrients

Definition

WIC targeted nutrients are the 5 nutrients that have been found to be low in the diets of low-income pregnant and breastfeeding women and their children. The 5 nutrients are:

- protein,
- calcium,
- iron,
- Vitamin A, and
- Vitamin C.

Functions

Each of the WIC targeted nutrients has a special function in the body. These are listed in the chart on the following page.

continued on next page

WIC Targeted Nutrients (continued)

Functions of the WIC Targeted Nutrients

Nutrient	Functions
Protein	• builds, maintains, and repairs cells of the body. • regulates body functions. • fights infection. • provides energy.
Calcium	• forms bones and teeth. • helps blood to clot. • helps nerves send messages. • helps muscles contract.
Iron	• part of hemoglobin in red blood cells. • part of myoglobin in muscle cells.
Vitamin A	• develops healthy, skin and mucous membranes. • helps prevent infections.
Vitamin C	• increases iron absorption. • helps heal wounds. • develops healthy gums and teeth. • helps prevent infections. • strengthens blood vessels.

continued on next page

WIC Targeted Nutrients (continued)

Food Sources	WIC targeted nutrients can be found in many of the foods that we eat, as well as the foods provided by WIC. Examples of some good food sources for these nutrients and the WIC foods that contain them are listed in the chart on the next page.
Learning Activity 1	To learn more about the nutrients in foods, you may want to try **Learning Activity 1** found at the end of this module.

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WIC Targeted Nutrients (continued)

Some Good Food Sources for Targeted Nutrients

Nutrient	Good Food Sources	WIC Foods
Protein	• Poultry, seafood, meat • Milk products • Calcium-fortified soy milk • Eggs • Tofu • Dried beans/peas • Nuts and seeds	• Tuna fish • Milk • Cheese • Dried beans/peas • Peanut butter
Calcium	• Calcium-fortified foods • Milk products • Corn Tortillas (made with calcium) • Greens (collards, mustard greens, kale) • Broccoli • Dried beans/peas	• Milk • Cheese • WIC-authorized calcium-fortified juices
Iron	• Poultry, fish, meat • Dried beans/peas • Dried fruit • Green vegetables • Iron-fortified cereals	• Dried beans/peas • WIC authorized cereals. • WIC authorized cereals, infant formula.
Vitamin A	• Orange-red vegetables (such as carrots, yams, peppers, sweet potatoes) • Dark green vegetables (such as spinach, collards, kale, broccoli) • Orange fruits (such as mango, papaya, apricot, cantaloupe) • Butter • Milk • Cheese • Egg yolk	• Carrots • Milk • Cheese • Eggs

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WIC Targeted Nutrients (continued)

Some Good Food Sources for Targeted Nutrients

Nutrient	Good Food Sources	WIC Foods
Vitamin C	• Citrus fruits • Citrus juices • Broccoli • Strawberries • Kiwi • Cantaloupe • Guava • Mango • Papaya • Cabbage • Snow peas • Peppers (hot, sweet, and /or chili).	• WIC authorized juices.

Food Groups

Definition

A food group is a grouping of foods that have similar nutrients.

5 Food Groups

Nutritionists have divided foods into 5 food groups. These groups are:

1. Grains (Breads, Cereal, Rice, and Pasta),
2. Fruits,
3. Vegetables,
4. Milk Products (Milk, Yogurt and Cheese), and
5. Protein Foods (Meat, Poultry, Fish, Dry Beans, Eggs and Nuts).

Contents of the Food Groups

Most foods fit in one or more of the food groups. The chart on the next page lists some common foods for each of the food groups.

Learning Activity 2

To learn more about how to assign foods to the appropriate food groups, you may want to try **Learning Activity 2** found at the end of this module.

continued on next page

Food Groups (continued)

5 Food Groups

Food Group	Some Common Foods
Grains	• Rice • Tortilla • Bread • Grits • Cereal • Pasta • Crackers
Vegetables	• Carrot • Broccoli • Spinach • Peppers (hot, sweet, and/or chili) • Bok choy
Fruits	• Fresh, frozen, canned and dried fruits • Orange • Banana • Melon • Mango • Apple • Fruit juice
Milk Products	• Milk, including buttermilk • Yogurt • Cheese • Ice cream • Pudding or custard
Protein Foods	• Beef • Pork • Lamb • Poultry (such as chicken, turkey) • Fish • Eggs • Dry beans/peas • Nuts (including peanut butter) • Soy products such as tofu

continued on next page

Food Groups (continued)

Serving Size	A serving size is a portion or unit that is used to measure the amount of food that may be eaten.
Used to Assess Intake	To help you assess a participant's diet, you will need to know what counts as a serving for each type of participant and for each food in a food group.
Chart	The Food Group Serving Size Chart on the next page shows what counts as a serving for: • children 1 to 3 years old, • children 4 to 5 years old, and • adults.

continued on next page

Food Groups (continued)

Food Group Serving Size Chart

Food Group/Food	1 Serving is about: 1-3 years old	4-5 years old	Adult
Grains			
Bread, tortilla, roll, muffin, pancake, waffle	½	1	1
Dry cereal	¼ - ½ cup	½ - ¾ cup	¾ cup
Noodles, rice, cooked cereal	¼ - 1/3 cup	1/3 – ½ cup	½ cup
Crackers	2-4 small	6 small	8 small
Vegetables			
Cooked or raw	2-3 Tablespoons	1/3 – ½ cup	½ cup
Fruits			
Fresh	¼ - ½ small	½ - 1 small	1 medium
Canned or frozen	2-3 Tablespoons	1/3 – ½ cup	½ cup
Juice	½ cup	¾ cup	¾ cup
Milk Products			
Milk or breast milk	½ cup	¾ cup	1 cup
Cheese	¾ ounce	1 ounce	1 ½ ounce
Protein Foods			
Meat, chicken, turkey, fish	1 ounce	1 ½ ounces	2 ounces
Egg	1	1	2
Cooked dry beans, lentils, tofu	1/3 cup	½ cup	1 cup
Peanut butter	1 Tablespoon	2 Tablespoons	4 Tablespoons

Continued on next page

Dietary Guidelines for Americans

Definition

The *Dietary Guidelines for Americans* are 10 recommendations developed by the United States Department of Agriculture (USDA) to guide people in making choices that promote good health and reduce the risk of developing diseases. They were developed for:

- adults of any age and
- healthy children 2 years and older.

Dietary Guideline A, B, C's

The *Dietary Guidelines for Americans* suggest 3 basic messages:

A: Aim for fitness.

B: Build a healthy base.

C: Choose sensibly.

10 Dietary Guidelines

The *Dietary Guidelines for Americans* are listed on the next page. Use these guidelines when talking with participants about basic nutrition and good health habits.

Continued on next page

Dietary Guidelines for Americans (continued)

Dietary Guidelines for Americans

Aim for Fitness:

- ∆ Aim for a healthy weight.
- ∆ Be physically active each day.

Build a Healthy Base:

- ☐ Let the Pyramid** guide your food choices
- ☐ Choose a variety of grains daily, especially whole grains.
- ☐ Choose a variety of fruits and vegetables daily.
- ☐ Keep food safe to eat.

Choose Sensibly:

- o Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.
- o Choose beverages and foods to moderate your intake of sugars
- o Choose and prepare foods with less salt.
- o If you drink alcoholic beverages, do so in moderation.

*** "Pyramid" is the Food Guide Pyramid. See following section for more information.*

Food Guide Pyramid

What is the *Food Guide Pyramid?*

The *Food Guide Pyramid* is a diagram in a triangle-like shape that shows what types and amounts of foods people need to eat each day to stay healthy.

See sample *Food Guide Pyramid* on next page.

What Does the *Food Guide Pyramid* Show?

The *Food Guide Pyramid* shows:

- the 5 food groups,
- a "fats, oils, and sweets" category, and
- the recommended range of servings that people should eat from each of these.

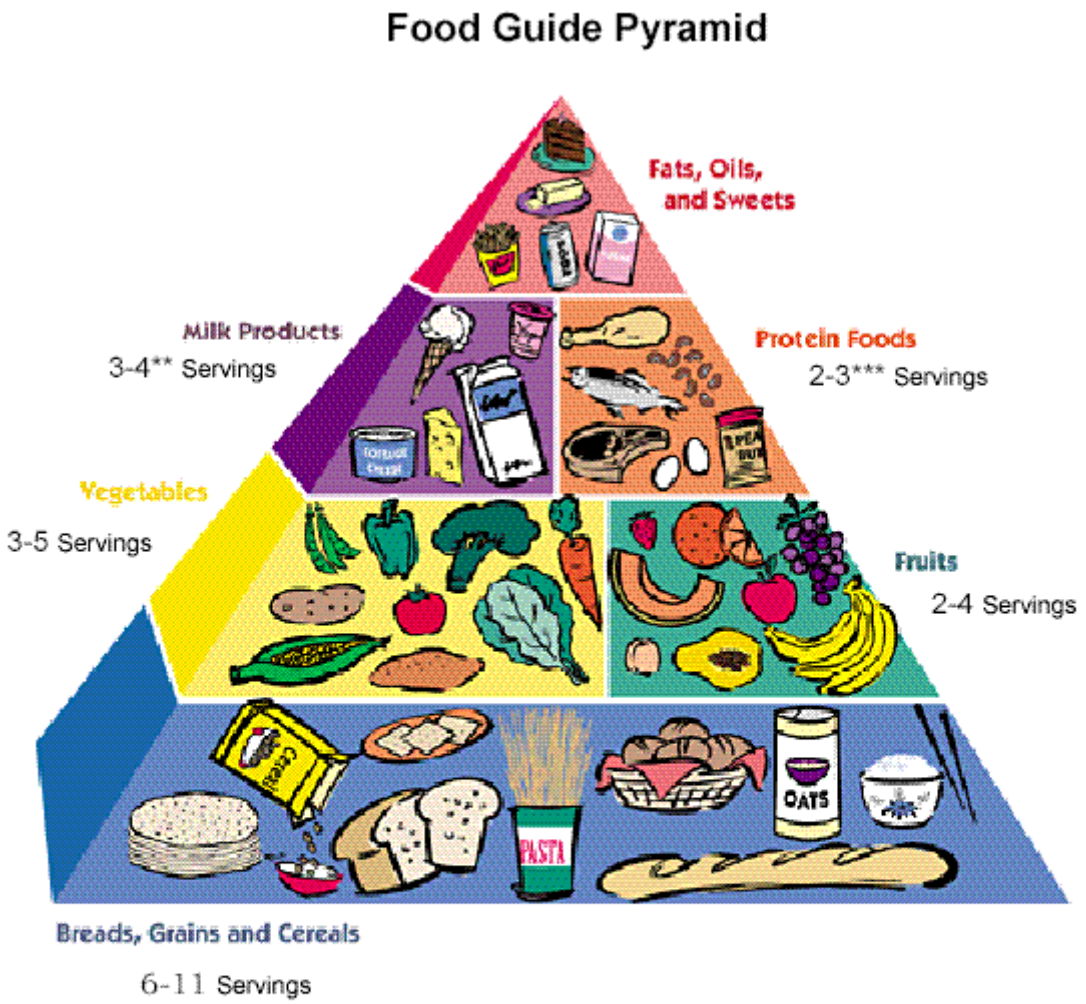
Using the *Food Guide Pyramid*

When you use the *Food Guide Pyramid* remember:

- Eat the recommended daily servings from each of the food groups.
  - Eat most foods from the bottom (base) of the pyramid and
  - Eat fewer foods from the top of the pyramid.

continued on next page

Food Guide Pyramid (continued)



** ***4 servings milk products for women less than 24 years old***
*** ***3 servings protein foods for pregnant or breastfeeding women***

continued on next page

Food Guide Pyramid (continued)

Recommended Servings

The *Food Guide Pyramid* shows a range of servings for each of the food groups. The exact number of servings recommended for a person will depend on her/his:

- gender,
- age,
- body size,
- activity level, and
- health status.

The chart below gives the range of servings for each of the food groups.

Food Group	Servings Each Day
Grains	6-11
Vegetables	3-5
Fruits	2-4
Milk Products	3-4
Protein Food Group	2-3
Fats, Oils, Sweets	Limit

Learning Activity 3

To learn more about using the *Food Guide Pyramid*, you may want to try **Learning Activity 3** found at the end of this module.

Energy

Energy

Our bodies use energy to:

- **carry out important life processes** (including the heartbeat, breathing, building new cells, metabolism, and maintaining body temperature) and
- **fuel body movements and physical activity.**

Nutrients that Give Us Energy

Our bodies use 3 nutrients for energy:

- carbohydrates,
- fat, and
- protein.

Carbohydrates are usually the best source for energy. (We can use fat for energy, but much more slowly. If we use protein for energy, it may not be available for other needed body functions.)

Calories

Calories are units we use to measure the amount of energy:

- used by our bodies and
- supplied by foods.

The number of calories supplied by a food will depend on the amount of carbohydrates, protein, and fat it contains.

The chart below shows the caloric values for 1 gram of carbohydrate, protein, and fat.

Nutrient	Calories/Gram
Carbohydrate	4
Protein	4
Fat	9

continued on next page

Energy (continued)

Energy	A person's body has an "energy balance" when the number of calories s/he eats is the same as the number of calories s/he uses.
Energy Needs Vary	Energy needs vary from person to person. Energy needs will depend on a person's: • body size, • age, • gender, • level of physical activity, • health status, and • other factors (such as pregnancy and breastfeeding needs).
"Junk" Foods	"Junk" food is a food that is **high in calories but low in nutrients.** "Junk" foods include: • candy, • soda, • fried snacks (such as potato chips), • doughnuts, • cakes, and • cookies. People who regularly eat "junk" foods in place of more nutritious foods: • may not get all the nutrients they need and • may become overweight.

Food Habits and Choices

What Affects Food Choices

People have many reasons for choosing which foods they eat. Some of these factors include:

- taste,
- texture,
- appetite,
- ethnicity / cultural background,
- cost,
- availability,
- medical factors (such as if the person is diabetic or lactose intolerant),
- advertising,
- convenience,
- emotion, and
- nutrition or health value.

Taste

Taste is the most important reason people choose the foods they eat.

No matter how healthy, cheap, or convenient a food is, you will not be able to convince someone to eat it unless s/he likes its taste!

Examples of How Factors Influence Food Choices

The chart on the next page gives you examples of how each of the factors may influence a person's food selection.

Learning Activity 4

To learn more about food habits and choices, you may want to try **Learning Activity 4** found at the end of this module.

continued on next page

Food Habits & Choices (continued)

Examples of How Factors Influence Food Choices

Factor	Example(s)
Taste	• A person who enjoys sweets may be more likely to eat sweet foods and drinks. • A person who enjoys salty foods may choose to eat foods high in salt.
Texture	A person who does not like “slimy” foods may not eat oysters or okra.
Appetite	A person who often does not feel like eating may not eat much.
Ethnicity/ Cultural Background	People from different cultures often like different types of foods. • A person from Mexico may prefer tortillas while a person from China may prefer rice. • A Seventh Day Adventist may not eat meat because her/his religious beliefs advise against such practices.
Cost	A person will probably not buy fresh raspberries in January when they are very expensive.
Availability	A person who lives far from a grocery store may not eat fresh fruits and vegetables very often if s/he has problems getting transportation to and from the store.

continued on next page

Examples of How Factors Influence Food Choices (continued)

Factor	Example(s)
Medical Factors	• If a person has diabetes, s/he may limit the amount of sweets s/he eats. • A person who is lactose intolerant may not drink milk.
Advertising	A person may buy a high-fat food because s/he has seen the food in a magazine, newspaper, and/or television ad.
Convenience	A person may eat at a fast-food restaurant because it is faster and easier than preparing a meal at home.
Emotion	A person who is feeling depressed may eat a chocolate bar even if s/he is not hungry.
Nutrition or Health Value	A person may drink orange juice because s/he knows it is rich in Vitamin C.

Summary

Nutrition

Nutrition is the process by which humans take in and use food.

Healthy eating is especially important for:

- growth and development,
- prevention of health problems such as iron-deficiency anemia and tooth decay,
- lowering the risk of chronic diseases such as heart disease, certain cancers, diabetes, and osteoporosis.

Functions of Food

The human body needs food for:

- energy,
- growth and development,
- maintenance and repair, and
- regulation of body functions.

Digestion

Digestion is the process in which the body breaks down food and absorbs nutrients into the bloodstream and into the cells.

Nutrient Groups

A nutrient is a substance needed by the body for energy, growth, maintenance, repair and/or regulation.

There are 6 major nutrient groups. They are:

- protein,
- carbohydrates,
- fat,
- vitamins,
- minerals, and
- water.

continued on next page

Summary (continued)

WIC Targeted Nutrients

WIC foods are rich in certain nutrients. These nutrients are:

- protein,
- calcium,
- iron,
- Vitamin A, and
- Vitamin C.

Food Groups

A food group is a group of foods that have similar nutrients.

Nutritionists have divided foods up into 5 food groups. These groups are:

1. Grain Group,
2. Fruit Group,
3. Vegetable Group,
4. Milk Product Group, and
5. Protein Group.

Dietary Guidelines

The *Dietary Guidelines for Americans* are 10 recommendations that help people make healthy choices. These guidelines suggest people:

A: Aim for fitness;
B: Build a healthy base;
C: Choose sensibly.

Food Guide Pyramid

The *Food Guide Pyramid* is a diagram in a triangle-like shape that shows what types and amounts of foods people need to eat each day to stay healthy.

It shows the number of servings from each food group that we need to eat each day.

continued on next page

Summary (continued)

Energy

Our bodies use energy to:

- carry out important life processes and
- fuel body movements and physical activity.

Our bodies use carbohydrates, fat, and protein for energy.

A person's energy needs will depend on:

- body size,
- age,
- gender,
- level of physical activity,
- health status, and
- other factors (such as pregnancy and breastfeeding needs).

Food Habits & Choices

People have many reasons for choosing which foods they eat. Some of these factors include:

- taste,
- texture,
- appetite,
- ethnicity/cultural background,
- cost,
- availability,
- medical factors,
- advertising,
- convenience,
- emotion, and
- nutrition or health value.

Glossary

amino acids- Amino acids are molecules that are the “building blocks” that make protein.

antibodies- Antibodies are substances found in the blood and body fluids that attach to germs or other invading substances to protect the body.

calcium- Calcium is a mineral needed by the body to form bones and teeth, help clot blood, stimulate nerves, help muscles contract, and maintain normal blood pressure and heartbeat.

carbohydrate- Carbohydrates are sugar, starch or fibrous foods that give our bodies energy.

complex carbohydrate- A complex carbohydrate is a long chain of hundreds or thousands of sugar molecules linked together.

dehydration- Dehydration is the condition in which the body does not contain the amount of water required for normal functioning.

diabetes- Diabetes is a condition in which carbohydrates cannot be metabolized normally.

enzymes- Enzymes are protein molecules that are needed for specific chemical reactions to occur.

digestion- Digestion is the process in which the body breaks down foods and absorbs nutrients into the bloodstream and into the cells.

esophagus- The esophagus is the passageway from mouth to stomach through which food passes after being swallowed.

fat- Fat is a substance needed by the body for energy, essential fatty acids, and carrying other nutrients such as some vitamins.

food- Food is anything that is eaten that helps meet the body’s needs for energy, growth, maintenance, repair and /or regulation.

food group- A food group is a grouping of foods that have similar nutrients.

Food Guide Pyramid – The *Food Guide Pyramid* is a food guide, in picture form, that shows what types and amounts of foods we need to eat each day to stay healthy.

Glossary (continued)

fructose- Fructose is a fruit sugar.

glucose- Glucose is a simple sugar that the body uses directly for energy.

hemoglobin- Hemoglobin is the iron-containing molecule that carries oxygen to the cells of the body.

Iron- Iron is a mineral needed by the body to carry oxygen to the cells.

Iron-deficiency anemia- Iron-deficiency anemia is a condition in which the body does not have enough iron and becomes tired and weak.

large intestine- The large intestine is the part of the digestive tract in which water and some minerals are absorbed into the bloodstream and undigested foods, bacteria, and waste materials are eliminated.

liver- The liver is the part of the digestive tract that makes bile to help the small intestine digest fat.

mineral- A mineral is an inorganic substance needed by the body in small amounts to form part of the body's structure or regulate chemical reactions in the body.

myoglobin- Myoglobin is the molecule found in muscles that stores oxygen.

neural tube defects- Neural tube defects are birth defects in which the brain, spinal cord, or protective coverings for these organs do not develop completely.

nutrient- A nutrient is a substance needed y the body for energy, growth, maintenance, repair and/or regulation.

nutrient group- A nutrient group is a group of similar substances needed by the body. There are 6 nutrient groups: proteins, carbohydrates, fat, vitamins, minerals, and water.

nutrition- Nutrition is the process by which humans take in and use foods.

nutritional status- Nutritional status is the state of a person's body resulting from the intake of food and use of nutrients.

Glossary (continued)

osteoporosis- Osteoporosis is a condition in which the bones become porous and brittle.

pancreas- The pancreas is the part of the digestive tract that secretes digestive enzymes and hormones into the small intestine.

protein – Protein is a substance needed by the body to build, maintain, and repair the cells of the body.

saturated- Saturated refers to fats that are usually hard at room temperature and come from animal or milk products.

serving size- A serving size is a portion size or unit that is used to measure the amount of food that may be eaten.

simple carbohydrate- A simple carbohydrate is a sugar molecule, such as glucose, fructose or galactose, or two of these sugar molecules linked together.

small intestine- The small intestine is part of the digestive tract in which carbohydrates are broken down into simple sugars, proteins are broken down into amino acids, fats are broken down into fatty acids, and nutrients are absorbed into the bloodstream.

sucrose- Sucrose is a sugar made up of molecules of glucose and fructose.

unsaturated- Unsaturated refers to fats that are usually soft at room temperature and come from plant products.

vitamin- A vitamin is an organic substance needed by the body in small amounts to assist in body processes and functions.

Vitamin A- Vitamin A is a fat-soluble vitamin that helps develop healthy eyes, skin, and mucous membranes, helps prevent infections, and helps develop bones and teeth.

Vitamin C- Vitamin C is a water-soluble vitamin that is needed to form collagen, help heal wounds, help develop gums and teeth, increase iron absorption, and strengthen blood vessels.

Glossary (continued)

Vitamin D- Vitamin D is a fat-soluble vitamin that helps the body absorb calcium, improves bone formation, and helps body maintain blood calcium levels.

WIC targeted nutrients- WIC targeted nutrients are the 5 nutrients (protein, calcium, iron, Vitamin A, and Vitamin C) that have been found to be low in the diets of low-income pregnant and breastfeeding women and their children.

Progress Check

1. List at least 3 reasons why the body needs food:

2. Healthy eating can prevent or lower the risk of developing what health problems? List at least 3.

3. Put a check mark (√) before all of the statements that are true about food.

    ____ Food is anything that is eaten that helps meet the body's need for energy, maintenance, repair, and/or growth.

    ____ Food is digested completely in the mouth.

    ____ Food helps control our body temperature.

    ____ During digestion, food is broken down into simple sugars, amino acids or fatty acids.

Progress Check (continued)

4. Match the body part involved in the digestion of food with its main function.

Body Part	Function
____ Esophagus	A. Chewing
____ Large intestine	B. Breaking down food using muscle action and acid
____ Small intestine	C. Eliminating waste materials
____ Mouth	D. Provides passageway to stomach
____ Stomach	E. Digesting and absorbing nutrients

5. Match the major nutrients with their functions.

Nutrient	Function
____ proteins	A. provide energy for the body
____ carbohydrates	B. help body regulate processes
____ fats	C. build, maintain and repair cells
____ vitamins	D. form part of body's structures
____ minerals	E. provide essential fatty acids and carry other nutrients
____ water	F. make up body fluids

Progress Check (continued)

6. List the WIC targeted nutrients.

7. For each of the nutrients listed in the chart below, write down at least 3 good food sources.

Protein	Calcium	Iron	Vitamin A	Vitamin C

Progress Check (continued)

8. Fill in the chart below by writing in the 5 food groups and at least 3 common foods for each group.

Food Group	Common Foods

Progress Check (continued)

9. List at least 5 recommendations from the *Dietary Guidelines for Americans.*

10. Put a check mark (√) before all statements that are true about using the *Food Guide Pyramid.*

____ Eat the most servings from the Grains Group since this food group is at the bottom or base of the pyramid.

____ Fats, oils, and sweets are at the top of they pyramid since they are most important.

____ The pyramid gives you the **exact** number of servings a person should eat.

____ Eat a lot of food from the Fruit and Vegetable groups since these are near the base of the pyramid.

____ The pyramid is made up of the food groups and fats, oils, and sweets.

Progress Check (continued)

11. For each of the nutrients listed below, write in the number of calories provided by 1 gram.

Nutrient	**Calories/Gram**
Carbohydrate	
Protein	
Fat	

12. People have many reasons for choosing which foods they eat. List 5 reasons that may influence eating habits.

Learning Activities

The following activities are included and are recommended for interactive learning:

- Learning Activity 1: Nutrients in Foods
- Learning Activity 2: Food Groups
- Learning Activity 3: Food Guide Pyramid
- Learning Activity 4: Foods We Eat

Activity 1: Nutrients in Foods

Learning Objectives

After completing this activity, the CNW will:

- know how to determine the nutrient content of foods using a food composition book and food labels.

Background

You may determine the nutrient content of a food by using:

- A **food composition book** or
- The **food label** often found on food packages.

Food composition books, as well as some basic nutrition textbooks, contain charts listing foods and their nutrient content. These books list specific portions of a food, its caloric value, and how much of the following nutrients it contains:

- carbohydrate,
- fat,
- protein,
- specific vitamins, and
- specific minerals.

Food labels also contain the nutrient composition of many foods.

Instructions

1. Ask your mentor/supervisor for a food composition book.

2. For each of the foods listed on the next page, fill in the chart with its nutrient content. (For "Vitamin" or "Mineral," choose any vitamin or mineral you wish, and write it in the blank space.)

continued on next page

Activity 1: Nutrients in Foods (continued)

Instructions (continued)

3. Identify 3 foods that contain a food label that you or your family eats regularly. List these 3 foods in the chart.

4. For each of these 3 foods, fill in the chart with its nutrient content using the information found on each of the labels.

5. Discuss your findings with your supervisor.

Activity 1: Nutrients in Foods (continued)

Food	Calories	Carbohydrate(grams)	Fat (grams)	Protein (grams)	Vitamin	Mineral
Peanut butter (1 Tablespoon)						
Bagel (1/2)						
Banana (1 peeled)						
Orange juice (1/2 C from concentrate)						

Activity 2: Food Groups

Learning Objectives

After completing this activity, the CNW will be able to:

- identify foods for each of the 5 food groups.

Background

A food group is a group of foods that have similar nutrients.

Nutritionists have divided foods into 5 food groups. These groups are:

1. Grain Group,
2. Fruit Group,
3. Vegetable Group,
4. Milk Product Group, and
5. Protein Group.

Instructions

1. For each of the foods listed on the next page, mark with a check (√) the food group that it would be found in.

2. After you finish the list, go on to the next page and write down some of the foods you might eat in a typical day. For each of these foods, mark with a check (√) the food group in which it belongs.

Activity 2: Food Groups (continued)

Food	Milk Products	Protein Foods	Vegetables	Fruits	Grains
Tortilla					
Rice					
Mango					
Banana					
Scrambled Egg					
Peanut Butter					
Lentils					
Bok Choy					
Sweet Potato					
Pineapple					
Yogurt					
Cottage Cheese					
Hot Dog Bun					
Ice Cream					

Activity 2: Food Groups (continued)

Typical Foods You Eat	Milk Products	Protein Foods	Vegetables	Fruits	Grains

Activity 3: Food Guide Pyramid

Learning Objectives

After completing this activity, the CNW will be able to:

- assess her/his diet using the *Food Guide Pyramid.*

Background

To assess a person's diet:

- Find out and record what s/he eats and drinks,
- Convert the amounts recorded to servings, and
- Compare the number of servings s/he ate to the number recommended in the *Food Guide Pyramid.*

Instructions

1. Write down everything you ate and drank in 24 hours. Use the *24-Hour Recall form* on the next page.

2. Convert the amounts you ate and drank to servings using the *Food Group Serving Size Chart.*

3. Identify which food group each food item belongs to and then count up how many servings you ate/drank for each of the food groups.

4. Compare the number of servings you ate/drank to the numbers recommended in the *Food Guide Pyramid.*

5. Discuss your findings with your mentor or supervisor. How healthy is your diet? What are some of the limitations of this method?

Activity 3: Food Guide Pyramid (continued)

24 Hour Recall Form

Name	Date of Birth	DO NOT WRITE IN THIS SPACE
		SUMMARY

CIRCLE:

Pregnant Non-pregnant Breastfeeding

INSTRUCTIONS:
Write down everything you ate and drank in 1 day (24 hours). Include between-meal snacks. Write down the time of day and amounts of each item.

Time	What you ate and drank and the amounts	Fruits & Vegetables: Vitamin A Rich	Fruits & Vegetables: Vitamin C Rich	Fruits & Vegetables: Other	Breads & Cereals: Whole Grains	Breads & Cereals: Enriched	Milk: Milk Products	Milk: Alternative	Protein: Vegetable	Protein: Animal

COMMENTS & FOLLOW-UP										
	Servings Eaten									
	Minimum Servings Needed	Pregnant & Breastfeeding	1	1	3	6		3		3
		25 + Years	1	1	3	6		3		2
		11-24 Years	1	1	3	6		4		2
	Difference									

Activity 4: Foods We Eat

Learning Objectives

After completing this activity, the CNW will be able to:

- identify some of the reasons that people choose the foods they eat.

Background

People have many reasons for choosing which foods they eat, including:

- taste,
- texture,
- appetite,
- ethnicity/cultural background,
- cost,
- availability,
- medical factors (such as if the person is diabetic or lactose intolerant),
- advertising,
- convenience,
- emotion, and
- nutrition or health value.

Instructions

1. Think about some of your favorite foods. Using the form, list the reasons you eat them.

2. Now think about the foods you don't eat. List the reasons you don't eat them.

3. What is the main reason you eat certain foods?

continued on next page

Activity 4: Foods We Eat

Food	Reasons
List some of the foods you **eat:**	List some of the reasons you **eat** these foods:
List some of the foods you **don't eat:**	List some of the reasons you **don't eat** these foods:
List your **main** reasons for eating:	

Why We Eat: The most important reason for choosing a food is taste. Remember, most people only eat what tastes good to them and nutrition may be less important to them than the other factors.

Progress Check Answers

1. List at least 3 reasons why the body needs food:

   Any 3 of the following answers are correct.

   The body needs food for:
   - ***energy,***
   - ***growth,***
   - ***maintenance and repair of body tissue, and***
   - ***regulation of body functions.***

2. Healthy eating can prevent or lower the risk of developing what health problems? List at least 3.

   Any 3 of the following answers are correct.
   - ***tooth decay,***
   - ***heart disease,***
   - ***certain cancers,***
   - ***osteoporosis,***
   - ***diabetes***
   - ***iron-deficiency anemia, and/or***
   - ***any vitamin or mineral deficiency.***

3. Put a check mark (√) before all of the statements that are true about food.

   _√_ Food is anything that is eaten that helps meet the body's need for energy, maintenance, repair, and/or growth.

   ___ Food is digested completely in the mouth.

   _√_ Food helps control our body temperature.

   _√_ During digestion, food is broken down into simple sugars, amino acids, or fatty acids.

Progress Check Answers (continued)

4. Match the body part involved in the digestion of food with its main function.

	Body Part		Function
D	Esophagus	A.	Chewing
C	Large intestine	B.	Breaking down food using muscle action and acid
E	Small intestine	C.	Eliminating waste materials
A	Mouth	D.	Provides passageway to stomach
B	Stomach	E.	Digesting and absorbing nutrients

5. Match the major nutrients with their functions.

	Nutrient		Function
C	proteins	A.	provide energy for the body
A	carbohydrates	B.	help body regulate processes
E	fats	C.	build, maintain and repair cells
B	vitamins	D.	form part of body's structures
D	minerals	E.	provide essential fatty acids and carry other nutrients
F	water	F.	make up body fluids

Progress Check Answers (continued)

6. List the WIC targeted nutrients.

    - ***protein,***
    - ***calcium,***
    - ***iron,***
    - ***Vitamin A, and***
    - ***Vitamin C.***

7. For each of the nutrients listed in the chart below, write down at least 3 good food sources.

    Any 3 of the following answers are correct.

Protein	Calcium	Iron	Vitamin A	Vitamin C
Poultry, sea-food, meats	***Calcium-fortified foods***	***Poultry, fish, meats***	***Orange-red vegetables (carrots, yams, peppers, sweet potatoes)***	***Citrus fruits***
Milk products	***Milk products***	***Dried beans/peas***		***Citrus juices***
Calcium-fortified soy milk	***Corn tortillas (made with calcium)***	***Dried fruit***		***Broccoli***
Eggs	***Salmon and small fish eaten with bones***	***Green vegetables***	***Dark green vegetables (spinach, collards, kale, broccoli)***	***Strawberries***
Tofu	***Tofu (processed using calcium)***	***Iron-fortified cereals***	***Orange fruits (mango, papaya, apricot, cantaloupe)***	***Kiwi***
Dried beans/peas	***Greens***		***Butter***	***Cantaloupe***
Nuts & Seeds	***Broccoli***		***Milk***	***Guava***
	Dried beans/peas		***Cheese***	***Mango***
			Egg yolk	***Papaya***
				Cabbage
				Snow peas
				Peppers

Progress Check Answers (continued)

8. Fill in the chart below by writing in the 5 food groups and at least 3 common foods for each group.

The following answers are suggested, others may also be correct.

Food Group	Common Foods
Grains	***Rice*** ***Tortillas*** ***Breads*** ***Cereals*** ***Pasta*** ***Crackers***
Vegetable	***Carrots*** ***Broccoli*** ***Spinach*** ***Peppers*** ***Greens*** ***Bok choy***
Fruit	***Fresh, frozen, canned and dried fruits*** ***Orange*** ***Banana*** ***Melon*** ***Mango*** ***Apple*** ***Fruit juice***
Milk	***Milk, including buttermilk*** ***Yogurt*** ***Cheese*** ***Ice cream or ice milk*** ***Pudding or custard***
Protein	***Beef*** ***Pork*** ***Lamb*** ***Poultry (such as chicken, turkey)*** ***Fish*** ***Eggs*** ***Dry beans/peas*** ***Nuts (including peanut butter)*** ***Soy products such as tofu***

Progress Check Answers (continued)

9. List at least 5 recommendations from *Dietary Guidelines for Americans.*

   ***Any 5 of the following answers are correct*.**

   - ***Aim for a healthy weight.***
   - ***Be physically active each day.***
   - ***Let the Pyramid guide your food choices.***
   - ***Choose a variety of grains daily, especially whole grains.***
   - ***Choose a variety of fruits and vegetables daily.***
   - ***Keep food safe to eat.***
   - ***Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.***
   - ***Choose beverages and foods to moderate your intake of sugars.***
   - ***Choose and prepare foods with less salt.***
   - ***If you drink alcoholic beverages, do so in moderation.***

10. Put a check mark (√) before all of the statements that are true about using the *Food Guide Pyramid.*

    ___√___ Eat the most servings from the Grains Group since this food group is at the bottom or base of the pyramid.

    ____ Fats, oils, and sweets are at the top of the pyramid since they are most important.

    ____ The pyramid give you the **exact** number of servings a person should eat.

    ___√___ Eat a lot of foods from the Fruit and Vegetable groups since these are near the base of the pyramid.

    ___√___ The pyramid is made up of food groups and fats, oils, and sweets.

Progress Check Answers (continued)

11. For each of the nutrients listed below, write in the number of calories provided by 1 gram.

Nutrient	Calories/Gram
Carbohydrate	***4***
Protein	***4***
Fat	***9***

12. People have many reasons for choosing which foods they eat. List 5 reasons that may influence eating habits.

    Any 5 of the following answers are correct.

    - ***taste,***
    - ***texture,***
    - ***appetite,***
    - ***ethnicity/cultural background,***
    - ***cost,***
    - ***availability,***
    - ***medical factors (such as if the person is diabetic or lactose intolerant),***
    - ***advertising,***
    - ***convenience,***
    - ***emotion, and***
    - ***nutrition or health value.***